

# **REPORT OF ACTIVITIES OF THE DEPARTMENT OF WATER RESOURCES**

**by**

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## **WATER CONDITIONS**

As of March 1, Water Year 2008 statewide hydrologic conditions were as follows: precipitation, 100 percent of average to date; runoff, 60 percent of average to date; and reservoir storage, 85 percent of average for the date. Snowpack water content is about 130 percent of average to date, and about 110 percent of the April 1 average—the normal date of maximum accumulation. The February unimpaired runoff rates in all major Sierra basins were well below the normal. February average due, in part, to below average precipitation and low snow levels. Many snow sensors in the lower elevations have well over the usual April 1 average. Sacramento River unimpaired runoff observed through February 29, 2008 was about 4.4 million acre-feet (MAF), which is about 53 percent of average. (On February 28, 2007, the observed Sacramento River unimpaired runoff through that date was about 4.9 MAF or about 59 percent of average.) The statewide Water Year runoff forecast is about 80 percent. The statewide April through July snowmelt runoff forecast is about 95 percent of average, with no large differences between regions.

On March 1, 2008, the Northern Sierra 8-Station Precipitation Index had a seasonal total of 31.5", which is about 90 percent of the seasonal average to date and about 63 percent of average for an entire Water Year (50.0"). The Water Year 2007 October through February seasonal total of 31.5" is the 43rd driest year out of 89 years of record (or approximately the median).

January and early February brought significant amounts of precipitation to California, including heavy snowfall in the mountains. Many locations in Northern and Central California now have near average rainfall. In Southern California, many stations are above average. Snow water content in California is almost twice as much as last year at this time. In fact, in almost all regions of the West, the snowpack is much above average. In the Sierra and the Cascades, the snowpack is even higher in percentage of average at low elevations. California's large water supply reservoirs received some inflow from these storms; however, the amounts were muted because much of the precipitation fell as snow. Because of the extremely dry conditions last year, the current long-term, dry hydrologic conditions still prevail. Storage in most of the major water supply reservoirs is still well below average and it would take a significant increase in the snowpack to fill them. The Sacramento and San Joaquin Valley Water Year Type indexes are forecasted to be "Dry" and "Below Normal," respectively.

Selected Cities Precipitation Accumulation as of 03/01/2008 (National Weather Service Water Year: July through June)					
	Jul 1 to Date 2007 - 2008 (in inches)	% Avg	Jul 1 to Date 2006 - 2007 (in inches)	% Avg	% Avg Jul 1 to Jun 30 2007 - 2008
Eureka	28.72	103	29.26	105	75
Redding	22.92	96	18.51	77	68
Sacramento	13.62	100	8.78	65	75
San Francisco	15.29	99	10.43	68	76
Fresno	8.08	103	4.52	58	71
Bakersfield	2.31	53	2.11	48	35

Los Angeles	13.37	121	2.42	22	88
San Diego	6.74	88	3.30	43	62

Key Reservoir Storage (1,000 AF) as of 03/01/2008								
Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,494	1,858	80	2,448	61	---	954
Shasta Lake	Sacramento	2,679	3,394	79	4,552	59	-1,348	1,873
Lake Oroville	Feather	1,463	2,537	58	3,538	41	-1,593	2,075
New Bullards Bar Res	Yuba	580	626	93	966	60	-216	386
Folsom Lake	American	378	557	68	977	39	-255	599
New Melones Res	Stanislaus	1,534	1,444	106	2,420	63	-436	886
Don Pedro Res	Tuolumne	1,355	1,439	94	2,030	67	-335	675
Lake McClure	Merced	317	536	59	1,025	31	-354	708
Millerton Lake	San Joaquin	266	346	77	520	51	-172	254
Pine Flat Res	Kings	351	535	66	1,000	35	-477	649
Isabella	Kern	133	181	74	568	23	-122	435
San Luis Res	(Offstream)	1,774	1,768	100	2,039	87	---	265

The latest National Weather Service Climate Prediction Center (CPC) long-range weather outlook for March 2008, issued February 29, 2008, is forecasting above average precipitation for Northern California and below average precipitation for parts of Central and all of Southern California. Average rainfall is forecast for most of Central California.

The pattern of this year's long-range forecast is influenced by the continuing development of moderate La Niña conditions (cooler than average sea-surface temperatures) across the tropical Pacific. Current conditions suggest that La Niña conditions have peaked, but may continue into spring, possibly longer. This La Niña is the strongest in eight years, and is in the top third of such events. Forecasts are for it to continue at least at moderate strength through April, May, and June.

La Niña events influence the position and strength of the jet stream over the Pacific Ocean, which in turn affects the winter precipitation and temperature patterns across the United States and other locations in the world. La Niña conditions, in general, favor a wetter than average Pacific Northwest and a drier than average American Southwest. California sits in the transition zone with the northern mountains of the State potentially wetter than average, and the Central Valley and Southern California potentially drier than average. In addition, during La Niña years, weather in Northern California can be highly variable, with both wet and dry scenarios possible. Southern California has a more consistent tendency toward dryness, suggesting that drought conditions are likely to persist in that region and the American Southwest, despite the above average precipitation the region has received so far this Water Year.

## **MAINTENANCE SUPPORT BRANCH**

### **MA Pipe Abandonment Project**

On November 1, 2006 the U.S. Army Corps of Engineers (Corps) sent a letter to the Reclamation Board (as of January 1, 2008 referred to as the Central Valley Flood Control Board) (Board) with concerns regarding a pipe crossing under the Sacramento River east bank levee at levee mile 9.08. The Board researched the Corps concerns and concluded that the owner of the property, M&H Realty Partnership VI, has refused to assess the condition of the pipe as requested by the Corps. As a result, the Board instructed the Department of Water Resources (DWR) to remove or abandon the pipe so that the affected levee can continue to be certified as meeting 100-year flood protection by the Federal Emergency Management Agency (Board Order 07-01 issued October 19, 2007). The Board requested that the pipe be properly abandoned in the fall of 2007, but due to permitting requirements and poor weather that goal was not feasible. DWR is planning to perform all of the necessary work in the summer of 2008.

The chosen method of repair will be to grout and abandon the pipe in place. Dewatering equipment may be required to enable capping of the pipe on the water side of the levee. Once plugged, grout will be pumped through the pipe until full to abandon the pipe in place. Given the small scale of the project, the Sacramento Maintenance Yard will be able to perform all of the necessary work within a day or two. Permits to perform the work are currently being prepared by staff of the Maintenance Support Branch.

## **LEVEE REPAIRS BRANCH**

### **Sacramento River Bank Protection Project Critical Erosion Repairs**

Ayres Associates consultant for the Corps (lead agency for the Sacramento River Bank Protection Project), has completed a report on Alternatives for Repairs to 17 priority sites identified in December, 2007. Nine of these sites have encroachments (intake pipes, pumping stations, docks and cables) and need negotiations with landowners for construction easements. However, eight of these sites have no encroachments and repairs are planned during the 2008 construction season.

Negotiations with the land owners for the two 2006 Cache Creek setback sites are continuing and initiation of repair work depends upon success of the negotiations.

## **San Joaquin River Flood Protection Critical Repair Sites**

Geotechnical field investigations, surveying and initial environmental assessments for three sites; San Joaquin River Mile 42.3, Paradise Cut (levee mile 3.8) and Mormon Slough (levee mile 33.0), have been completed. Further work on 65 percent engineering and environmental design for slope protection is in progress.

For the Lower San Joaquin Levee District San Joaquin reaches upstream and downstream of the Chowchilla Bypass, DWR has initiated negotiations with the Corps for finding a joint solution to seepage and flood damage repairs. DWR is interested in finding a long-term solution to seepage problems on the left bank where failure could cause disaster for the Town of Firebaugh. The Corps has ten Order 4 sites to be repaired in the same reach.

## **2006 Public Law (PL) 84-99 Rehabilitation Assistance Program**

The Corps is lead agency for PL84-99 repairs and DWR is providing environmental permitting, rights-of-way and borrowed materials for these sites. In all, there are six Order 2 and 130 Orders 3, 4 and 5 remaining sites to be repaired. DWR's Flood Management Division (DFM) and Real Estate Branch are working together to arrange for construction easements. DFM has developed a coordination program to work with the Reclamation Districts and landowners to find solutions to repairs around existing encroachments.

## **LEEVE EVALUATIONS BRANCH**

The Levee Evaluations Branch was created to perform geotechnical levee evaluations on about 350 miles of urban levee. An urban levee is defined as protecting at least 10,000 people. The geotechnical levee evaluations will focus on the urban project levees in geographic areas of Reclamation District (RD) 17, RD 404, Natomas, West Sacramento, Marysville, Woodland, Davis, Stockton, MA9, the American River, Sacramento, the Sutter Basin, and RD 784. This program is in the process of expanding to other areas within the Sacramento and San Joaquin Flood Control Projects with the Bond funding.

The purpose of these evaluations is to assist in developing a levee certification program based on geotechnical data, provide consistent formats for data (and associated data exchange), and provide an evaluation of the levee system based on geotechnical data. This evaluation will be conducted with the goal of providing 200 year level of protection in urban areas and the design profile level of protection in rural areas using the Corps under seepage criteria.

## **GENERAL**

1. The Levee Evaluations Branch is working closely with the City of West Sacramento, RD 17, Natomas, Sacramento Area Resources Agency (SAFCA) , RD 1, Three Rivers, LD 1, and others within the Department and the Corps to review issues concerning early implementation projects.
2. Weekly coordination meetings with the Corps continue so that subsurface exploration plans are approved in advance of work and also so as to not duplicate efforts.
3. The Levee Evaluations Branch is continuing to assist the Floodplain Mapping Office with evaluating rates and scope of services for the geotechnical portion of their four Central Valley mapping contracts.
4. Rate negotiations are continuing for the non-urban levee evaluation contracts.

The work performed in February are broken into three geographic urban levee areas of North, Central and South is as follows:

## **NORTH**

1. *Sutter Basin*: Preparation of the Draft Phase 1 Geotechnical Evaluation Report (P1GER) continues with an early March delivery target. This report will be distributed to the Corps and also DWR Division of Engineering for QA/QC. Comments from this QA/QC review will be incorporated into an updated version of the P1GER for distribution to local stakeholders in May.
2. *Marysville*: Responses to DWR, Corps, and stakeholder review comments on the Draft Phase 1 Geotechnical Data Report (P1GDR) have been completed and responses to DWR and Corps review of comments on the Draft P1GER are underway.

## **CENTRAL**

1. Exploration drilling is underway on West Sacramento and Sacramento levees and preliminary bathymetric data has been reduced for the Sacramento River in the Natomas, West Sacramento and Sacramento levee areas.
2. A Draft P1GDR for the NEMDC portion of Natomas levees is underway. Field exploration data for NEMDC was turned over to support local and Corps efforts. Several planning meetings were conducted with the Corps, DWR, and stakeholders regarding the geotechnical evaluation of the remaining levee system in Natomas. Review of the extensive geotechnical information for these remaining areas is underway.

3. Review meetings were conducted with the Corps on the Davis and Woodland levees. A Technical Review Memorandum (TRM) on the available information for the Davis levees has been completed including a planned field exploration program which will begin in March.
4. The TRM for the Woodland levees was held up based on the need to review the hydrologic issues associated with the effectiveness of the Cache Creek portion of the northern Woodland levees. The Corps is also reviewing this issue and it was decided to proceed in northern areas with a limited program at this time that will concentrate on geomorphology. The TRM will be completed and field exploration will start in mid-March in Woodland.

## **SOUTH**

1. Briefing and Question and Answer sessions were held with stakeholder groups for RD 404, SJAFCA, and RD 17 levee systems in February.
2. Field exploration work continues in RD 17 and Phase 1 field exploration work was completed in RD 404 this month. The Draft P1GER for RD 17 was submitted and reviewed, and the Draft Phase 1 Geotechnical Data Reports (P1GDRs) for RD 404 and SJAFCA are underway.
3. Preliminary bathymetric data in the San Joaquin River for the RD 17 levees was reduced and is available for local stakeholder use.

## **PROJECT DEVELOPMENT BRANCH**

### **I. Projects and studies to improve flood protection for Sacramento**

#### **Joint Federal Project at Folsom**

Progress on the Folsom Dam Modifications Project (also known as the Folsom Dam Joint Federal Project) continues and the four sponsoring agencies, The Central Valley Flood Protection Board, Corps, The U.S. Bureau of Reclamation, and the SJAFCA continue to make this project a reality on the ground. In particular:

- A contract has been awarded by the U.S. Bureau of Reclamation and initial excavation work has begun on the spillway chute and stilling basin. A ground breaking ceremony to celebrate this accomplishment took place in January with many State and Federal VIPs and the Governor providing the keynote address.

- Hydraulic Design work using four physical and two numeric models is nearing completion including one physical model that was the largest ever created in Reclamation's Technical Service Center in Denver. This model has been featured by local news stations in Denver and Sacramento as an unprecedented engineering achievement.
- Design is well underway to develop a unique energy dissipation system using a state of the art step spillway together with more traditional baffle blocks.
- A detailed construction phasing analysis was completed that allows the project partners to plan for and minimize schedule and construction risks at the high security Folsom Dam facility. The project is currently scheduled for completion in 2015.
- An analysis is underway to evaluate the feasibility of constructing the approach channel in the dry using a cofferdam. The original design estimate was based on excavating the approach channel under wet conditions. Refinement of the costs and risks of both methods is prudent at this stage of the design.
- Progress continues on the 35 percent design package. The Corps estimates this package to be complete and ready for review in April 2008.
- A new draft Environmental Assessment (NEPA) / Initial Study (CEQA) has been developed by the U.S. Bureau of Reclamation. The Board should expect to see this document later this spring or early summer.
- The language for an amendment to our existing Project Cooperation Agreement (PCA) between the Board, SAFCA, and the Corps is being developed by the Corps. The amendment will bring the agreement up to date with recently passed Federal and State authorizations for the Project. The Board should expect to see this document by this summer.

While there is an enormous amount of work left to accomplish, the project partners continue to work together to eliminate obstacles as fast as they arise.

### **American River Common Features Project**

The American River Common Features Project continues to improve the levee system along the American and Sacramento Rivers in Sacramento. Current activities by key project elements are:

- Design for sealing the windows left at the locations of deep utility crossings or other major infrastructure in the 24 miles of slurry wall along



- the American River levees has been initiated. These repairs are commonly referred to as the WRDA 1996 Remaining Sites work.
- A construction contract for raising 4300 feet of levee in the Mayhew area and installing a closure structure on the Mayhew Drain has been awarded. This work was authorized by WRDA 1999.
- Design for raising and widening three levee sections at Jacob's Lane, Howe Avenue, and Highway 160 has been commenced. This work was authorized by WRDA 1999 and commonly referred to as the WRDA 1999 Levee Raising work.
- The Natomas General Re-Evaluation Report has been expanded to include the greater Sacramento region and Pocket Area and has been re-named the Common Features GRR.

### **South Sacramento County Streams Project**

The South Sacramento County Streams Project will provide increased flood protection for the south area of Sacramento

- SAFCA, Sacramento County, and the Board have signed an MOU that will allow the project to begin burrowing owl mitigation.
- Design modifications for the Unionhouse Creek Levee are being developed to account for a low spot along Franklin Blvd.
- UPRR is reviewing the construction plan for the stoplog structure construction at MP 131.03 in the Sacramento Subdivision.

## **II. PROJECTS AND STUDIES TO IMPROVE FLOOD PROTECTION FOR OTHER AREAS**

### **West Sacramento Project**

The Corps is gathering geotechnical data for analysis of the two levee slips. Geotechnical borings are scheduled to start in the middle of March 2008.

Negotiations are underway with the Corps and local agencies to amend the current agreement to increase the project cost.

### **West Sacramento Feasibility Study**

The Corps has decided that evaluation of future work to provide 200-year level of protection for the area will need to be done under a feasibility study. Agreement negotiations are currently underway with the Corps, State, and local agencies.

## **Yuba River Basin Project**

General re-evaluation of the Yuba River Basin Project continues. The goal is to complete the General Re-Evaluation Report to seek project re-authorization from Congress in 2009.

The Marysville Ring levee improvement is a separable element of the Yuba River Basin Project. Authorization to initiate design and construction simultaneously with the GRR is underway. If authorized, Marysville will be afforded a high level of protection significantly sooner than originally scheduled. The Corps proposes to award a contract for design in 2008 and expects execution of a Project Cooperation Agreement with the Board to commence construction of the Ring Levee repairs in Spring 2009. Completion of the Ring Levee repairs could potentially be done in 2011.

## **Sutter County Feasibility Study**

The Corps has completed the Project Management Plan. This plan will be used to move the study forward. Negotiations are underway with the Corps and Sutter County to amend the current agreement for the increased cost.

## **Hamilton City Project**

The design of the Hamilton City project is on-going.

## **West Stanislaus, Orestimba Creek Study**

The Feasibility Report and the environmental document preparation are on-going.

## **FLOODPLAIN MANAGEMENT BRANCH**

Recently issued \$3.7 million in task orders to the four regional architecture and engineering mapping contractors who are working on the Central Valley Floodplain Evaluation and Delineation Project.

The purpose of the task orders is to fly LIDAR and take digital aerial photos for 9,000 square miles of the Central Valley, extending from Fresno to Redding. The LIDAR data will be reduced and processed under future task orders to create digital elevation models (topographic maps).

Current land surveys overlain with aerial photos is a key dataset for the Floodplain Evaluation and Delineation Program and the Central Valley Flood Plan. The surveys will focus primarily on the floodplains of the Sacramento and San Joaquin rivers and their tributaries protected by project levees and also the

urban and urbanizing areas in the Sacramento and San Joaquin valleys as defined by Senate Bill 5.

## **FLOOD OPERATIONS BRANCH**

### **Flood Operation Sections**

#### **Eureka Flood Center**

The Eureka Flood Center is in process of completing the integration of a new Flood Center Manager and replacing a technical student position. Dave Kennard, long time Flood Center Manager, will retire in March 2008. As of March 1, 2008, Sherry Constancio has taken over the day to day management operations of the flood center. Sherry will continue the Department's effort to co-locate and conduct year-round joint operations with the National Weather Service (NWS). Additional activities will include working closely with the Joint Operations Center in Sacramento and with north coast local agencies to further enhance emergency preparedness and response. It is anticipated that the student position will be filled within the next 45 days.

#### **Joint State-Federal Operations Center**

The Flood Operations Center (FOC) in Sacramento has been involved in many activities over the past few months. The core operation activities include: daily updates on River Forecast recordings, high water notification calls to local jurisdictions, bi-weekly coordination with the NWS webcast Weather Briefings, public inquiries, and conduct numerous coordination meetings with various stakeholders which include: the Corp of Engineers, Governors' Office of Emergency Services (OES), local Operational Areas, the Delta Protection Commission, and the Delta Flood Response Group local agencies.

Sean Mann is the new FOC senior engineer and has been working on filling remaining staff vacancies. Starting this month, a key project of the Section is the development of three Emergency Preparedness and Flood Response pilot projects.

The FOC hired a number of staff to enhance its ability to respond to various types of emergencies. This past fall/winter season, staff participated in recovery efforts from the Southern California Firestorm and the wet weather/wind events of January 4<sup>th</sup> and 25<sup>th</sup>.

A major training effort on various topics has been implemented with the assistance of Cindy Matthews from the National Weather Service for all new staff and as a refresher for existing center staff. Training has been conducted twice a week since November and will continue until the end of the wet season.

New carpet and paint were carried out in February in the Flood Operations Center (FOC) and other areas that support the center. The FOC has completed the packing and unpacking from this recent building maintenance. With the assistance of facilities management and the cooperation of staff, the (FOC) was able to maintain its operational capacity throughout the carpet replacement with no reduction in capacity.

The Joint Operations Center and the Eureka Flood Center have been coordinating with California Data Exchange Center, and United States Geological Survey staff regarding North Coast Gages to address system improvements and maintenance.

### **Decision Support Section**

This Section continues to maintain IT assets for the FOC. Decision Support is working on modernizing and improving FOCIS and Flood GIS resource for emergency management. In addition, they have been working on providing support for various Department level portal transitions over the past number of months. Modernization of the Division's web portal is currently being addressed. It is an important modernization of the Department's flood information system to be completed prior to the next wet season. The Section has filled all if its positions and is in the process of purchasing needed IT equipment and software to meet this deadline.

The Section provided Jay Punia a demonstration of the new FOCIS prototype during the week of March 3, 2008.

### **Emergency Response and Security Section**

This Section has been conducting a number of activities including: providing technical and direct assistance to Cal OES during the 2007 Southern California Firestorm, revising the Emergency Operations and Incident Command Team (ICT) Rosters, facilitating and participating in table top training and exercises internally and externally, conducting numerous Flood Fight training classes in northern and southern California and with various State and local agencies, and in coordination with the Division of Engineering, overseeing the placement of 113 thousand tons of 24" minus rock at the Department's Rio Vista Transfer/Stockpile Facility as part of the effort to enhance emergency preparedness and response in the Delta. Section staff is completing the study program and received certification with the FEMA Incident Command System (ICS) and FEMA National Incident Management System (NIMS) in support of the Flood Operations Section.

## **Flood System Analysis Section**

This Section continues to support Cal OES in the 2007 Southern California Firestorm recovery effort by providing technical assistance to Cal OES on their after-action comments/ideas and update to the “draft” Burn Area Recovery Task Force matrix.

All section staff are completing the study program and received certification on the FEMA Incident Command System (ICS) and FEMA National Incident Management System (NIMS) in support of the flood Operations Section. Staff assisted the snow survey section with the March 2008 snow survey at Lyons Creek.

A major activity that has been assigned to the Section is the development of the Department’s Delta Emergency Operations Plan. This is a major stakeholder process and will address various interests and solutions to responding to various types of emergency within the Delta region. These may include flood or flood risks, earthquake, and spill events. This effort will take advantage of the interim Delta Emergency Operations Plan that is posted on the Department’s website at <http://www.dfm.water.ca.gov/er/>

## **FLOOD PROJECT INTEGRITY AND INSPECTION BRANCH**

Over the last two years the Department of Water Resources (DWR) has increased and improved its inspection activities to bring the DWR inspection program into closer compliance with the expectations of the Corps of Engineers (Corps) National Levee Safety Program. The fall 2007 project levee inspections were completed using the Corps’ updated Flood Damage Reduction System Inspection Report Checklist to evaluate the level of maintenance for all categories except for trees, other vegetation, and certain encroachments. DWR used interim vegetation criteria requiring open visibility and access to the landside levee slope and 10’ toe easement, the crown, and the top 20’ of the waterside slope.

A new method to determine the annual maintenance rating of each unit and Levee Maintaining Agency (LMA) was developed by DWR to provide more objectivity and consistency. The lengths of all maintenance deficiencies receiving Minimally Acceptable (M) or Unacceptable (U) ratings in each unit and LMA are totaled. The percentage of unit and LMA length for those totals is calculated and compared to overall rating thresholds established by DWR. Minimally Acceptable (M) percentages from zero to 10% of unit or LMA length result in an overall Acceptable (A) rating, M percentages from 10 to 20% result in an overall M rating, and M percentages over 20% result in an overall Unacceptable (U) rating. Unacceptable percentages under 5% result in an overall M rating, U percentages over 5% result in an overall U rating. A more detailed explanation is presented in the Overall Maintenance Rating Flow Charts.

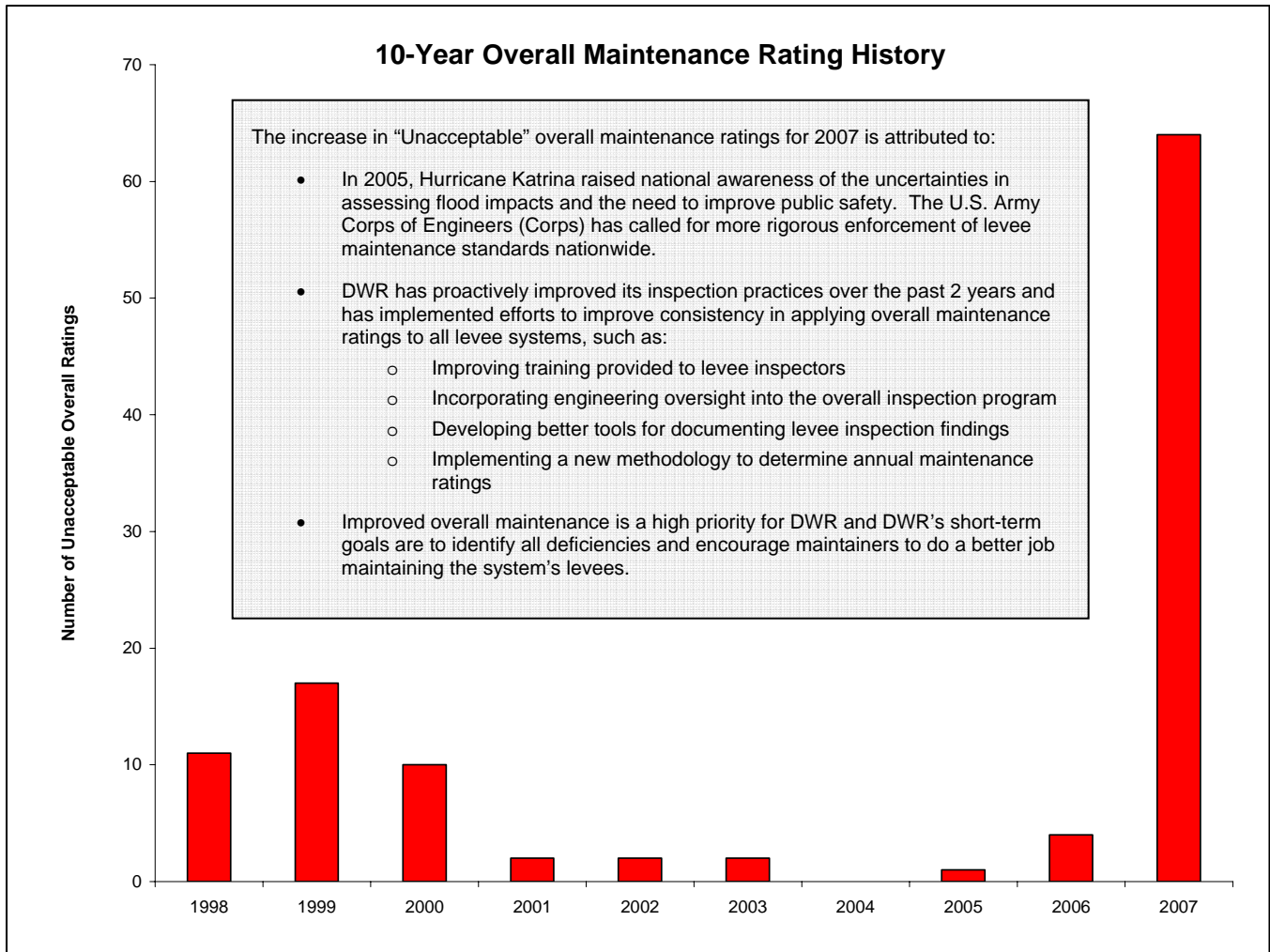
The Corps issued Memo 43 in October 2006, which identified over 30 LMAs with unacceptable maintenance. Many of the deficiencies listed were for encroachments that obstruct visibility and access to the levee and easement, although the Corps did not differentiate between those with and without an encroachment permit. In response, DWR documented all such encroachments, identifying them as Partially Obstructing (PO) or Completely Obstructing (CO). DWR did not include the approximately 129 miles of PO or 17 miles of CO encroachments in the mileage totals and these PO and CO encroachments did not affect fall 2007 annual maintenance ratings.

As a result of our somewhat more rigorous application of Corps of Engineers (Corps) non-vegetation inspection criteria, comprehensive application of DWR's interim vegetation criteria, and the new overall rating method, a total of 64 of the 107 LMAs received Unacceptable annual maintenance ratings (25 were Acceptable, 18 were Minimally Acceptable) compared to four Unacceptable ratings in 2006. Had the Corps' 2007 Vegetation White Paper criteria (in effect, only short grass allowed on levees and easements) been applied, we estimate that 103 of the 107 LMAs would have received Unacceptable ratings for fall 2007.

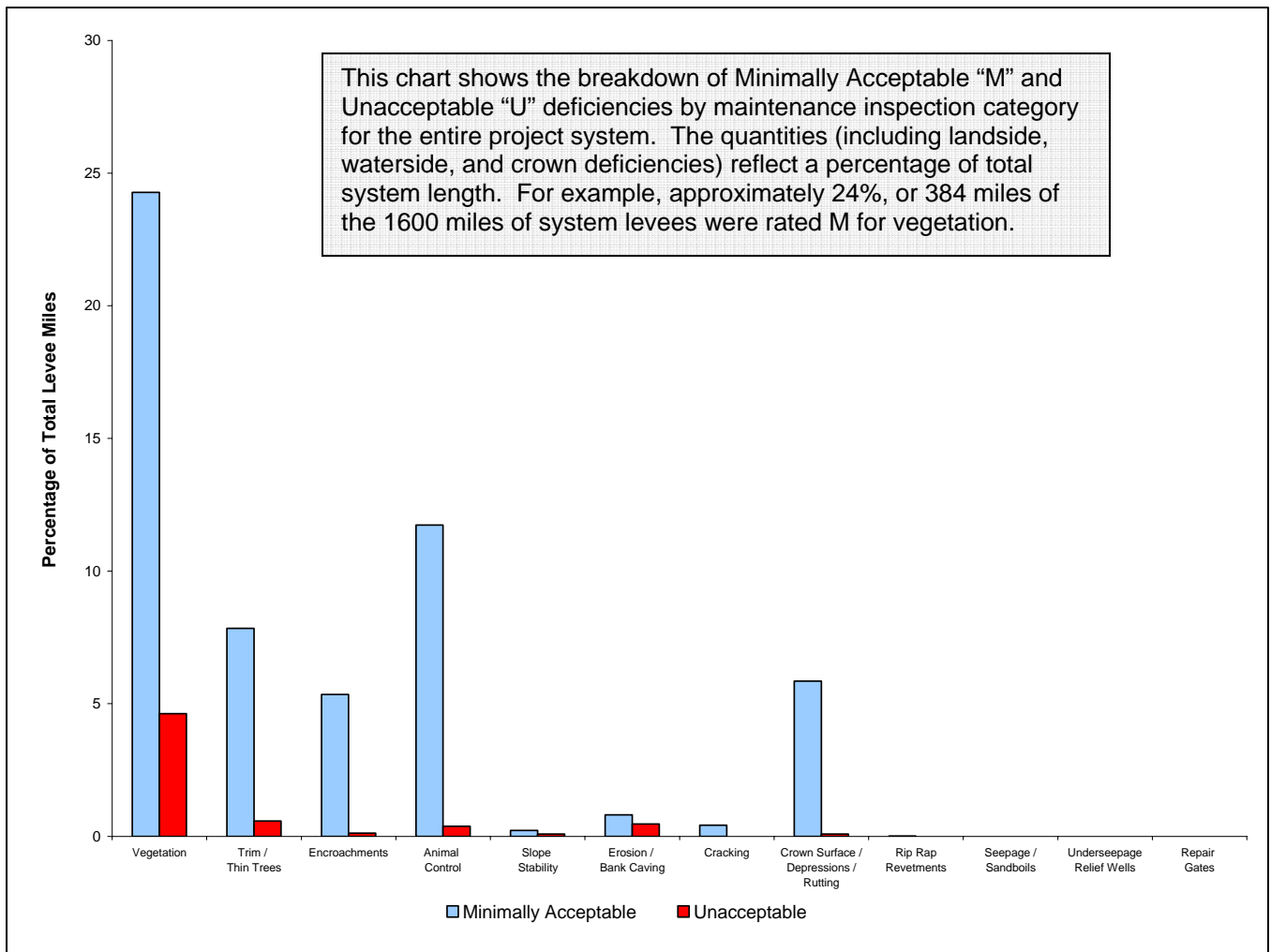
The following charts summarize the annual 2007 annual levee maintenance ratings for the 107 levee maintaining agencies DWR inspects. The results reflect implementation of the October 2007 interim vegetation criteria, which are aimed at improving public safety by providing visibility for inspections, improving access for overall maintenance, eliminating vegetation conflicts that could hamper flood fight activities, and preserving riparian vegetation and critical habitat along the water.

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The chart below shows a 10-year history of the total number of overall Unacceptable “U” annual maintenance ratings each year. The results reflect an increase in “Unacceptable” overall maintenance ratings for 2007 compared to previous years.



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## 2007 Overall Maintenance Rating Summary

The table below summarizes the 2007 overall maintenance ratings for the 107 local maintaining agencies (LMA). The overall rating codes and totals:

“A” = Acceptable	Total of 25 “A” ratings
“M” = Minimally Acceptable	Total of 18 “M” ratings
“U” = Unacceptable	Total of 64 “U” ratings

District Short Name	District Name	Overall Rating
LD0001G	Levee District No. 0001(Glenn)	U
LD0001S	Levee District No. 0001(Sutter)	M
LD0002	Levee District No. 0002	A
LD0003	Levee District No. 0003	A
LD0009	Levee District No. 0009	A
MA0001	Maintenance Area No. 0001	M
MA0003	Maintenance Area No. 0003	A
MA0004	Maintenance Area No. 0004	A
MA0005	Maintenance Area No. 0005	M
MA0007	Maintenance Area No. 0007	U
MA0009	Maintenance Area No. 0009	M
MA0012	Maintenance Area No. 0012	A
MA0013	Maintenance Area No. 0013	A
MA0015	Murphy Slough @ M&T Ranch	U
MA0016	Maintenance Area No. 0016	M
MA0017	Maintenance Area No. 0017	U
NA0001	American River Flood Control District	M
NA0002	Brannan Andrus Levee Maintenance District	U
NA0003	Butte County	A
NA0004	City of Marysville	M
NA0005	City of Sacramento	U
NA0006	East Honcut Creek	U
NA0008	Knights Landing Ridge Drainage District	U
NA0009	Lake County	M
NA0010	Lower San Joaquin L.D.	M
NA0011	Madera County	U
NA0012	Melin Levee	U
NA0013	Merced Stream Group	U
NA0014	See MA0015	
NA0015	Plumas County	U
NA0016	Sacramento River West Side Levee District	U
NA0017	San Joaquin F.C.D.	U
NA0018	Shea Levee	A
NA0019	Tehama County	U
NA0020	West Interceptor	U
NA0021	Yolo County Cache Creek	U
NA0022	Yolo Service Area 6	U

District Short Name	District Name	Overall Rating
NA0023	Turlock Irrigation District - Gomes Lake (Formerly Unit 2, RD2091)	A
RD0001	Reclamation District No. 0001	M
RD0003	Reclamation District No. 0003	U
RD0010	Reclamation District No. 0010	U
RD0017	Reclamation District No. 0017	U
RD0070	Reclamation District No. 0070	M
RD0108	Reclamation District No. 0108	A
RD0150	Reclamation District No. 0150	U
RD0307	Reclamation District No. 0307	U
RD0341	Reclamation District No. 0341	U
RD0349	Reclamation District No. 0349	U
RD0369	Reclamation District No. 0369	U
RD0404	Reclamation District No. 0404	U
RD0501	Reclamation District No. 0501	U
RD0524	Reclamation District No. 0524	U
RD0536	Reclamation District No. 0536	U
RD0537	Reclamation District No. 0537	U
RD0544	Reclamation District No. 0544	U
RD0551	Reclamation District No. 0551	U
RD0554	Reclamation District No. 0554	U
RD0556	Reclamation District No. 0556	U
RD0563	Reclamation District No. 0563	U
RD0755	Reclamation District No. 0755	U
RD0765	Reclamation District No. 0765	U
RD0784	Reclamation District No. 0784	M
RD0785	Reclamation District No. 0785	U
RD0787	Reclamation District No. 0787	A
RD0817	Reclamation District No. 0817	U
RD0827	Reclamation District No. 0827	U
RD0900	Reclamation District No. 0900	U
RD0999	Reclamation District No. 0999	U
RD1000	Reclamation District No. 1000	A
RD1001	Reclamation District No. 1001	U
RD1500	Reclamation District No. 1500	M
RD1600	Reclamation District No. 1600	U
RD1601	Reclamation District No. 1601	A
RD1602	Reclamation District No. 1602	U
RD1660	Reclamation District No. 1660	A
RD2031	Reclamation District No. 2031	U
RD2035	Reclamation District No. 2035	U
RD2058	Reclamation District No. 2058	U
RD2060	Reclamation District No. 2060	U
RD2062	Reclamation District No. 2062	U
RD2063	Reclamation District No. 2063	U
RD2064	Reclamation District No. 2064	U
RD2068	Reclamation District No. 2068	A
RD2075	Reclamation District No. 2075	U

District Short Name	District Name	Overall Rating
RD2085	Reclamation District No. 2085	U
RD2089	Reclamation District No. 2089	U
RD2091	Reclamation District No. 2091	A
RD2092	Reclamation District No. 2092	A
RD2094	Reclamation District No. 2094	U
RD2095	Reclamation District No. 2095	U
RD2096	Reclamation District No. 2096	A
RD2098	Reclamation District No. 2098	M
RD2101	Reclamation District No. 2101	U
RD2103	Reclamation District No. 2103	A
RD2104	Reclamation District No. 2104	U
RD2107	Reclamation District No. 2107	M
ST0001	Cache Creek	M
ST0002	East Levee S.B.P.	M
ST0003	East Levee Sac River	A
ST0004	East Levee Yolo Bypass	U
ST0005	Hamilton Bend (Feather River West Levee)	U
ST0006	Nelson Bend (Feather River West Levee)	U
ST0007	Putah Creek	M
ST0008	Sacramento Bypass	A
ST0009	Tisdale Bypass	A
ST0010	Wadsworth Canal	A
ST0011	West Levee Yolo Bypass	U
ST0012	Willow Slough	A

Short Name Legend:

LD Levee District  
MA Maintenance Area  
NA Named Area  
RD Reclamation District  
ST State Maintained

# OVERALL MAINTENANCE RATING FLOW CHART

## Step 1: DWR Inspections

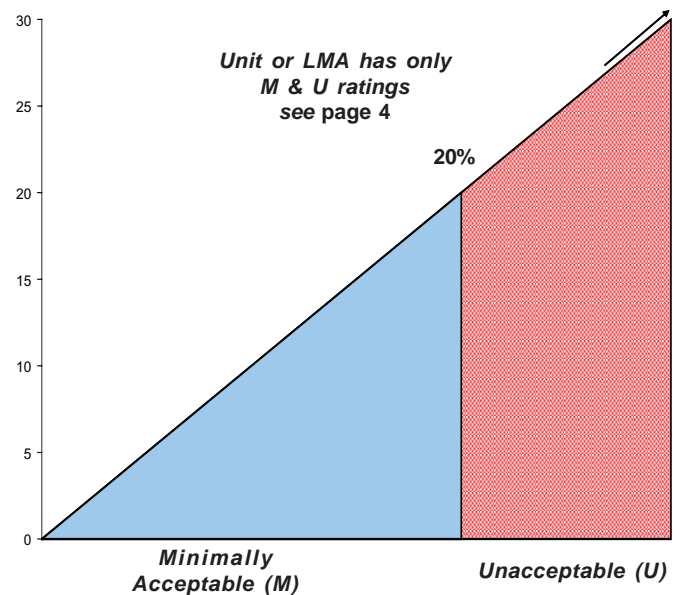
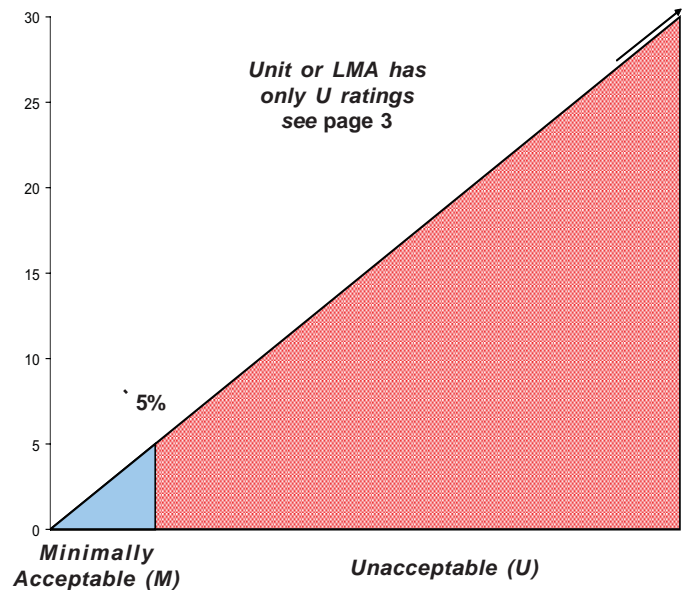
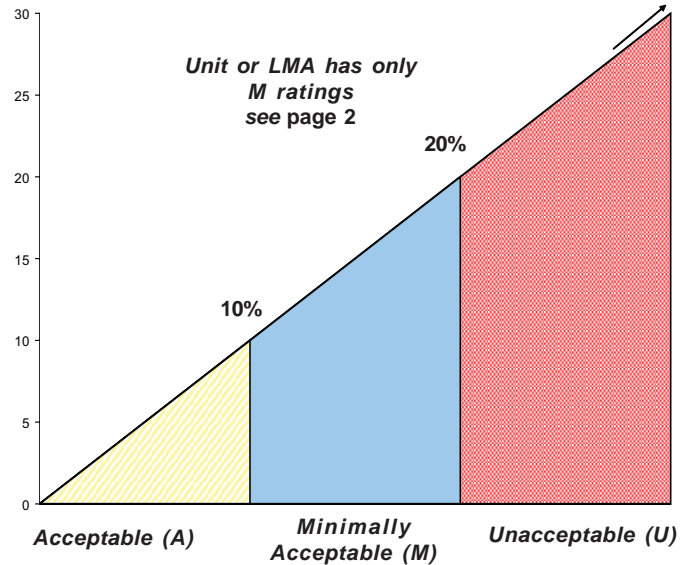
DWR inspectors document location and length of maintenance deficiencies (categories listed below).

Deficiencies are rated either as **Minimally Acceptable (M)** or **Unacceptable (U)**. Total mileages of each rating in each unit and LMA are calculated and divided by total unit and LMA length to determine percentages of M or U. Percentage thresholds are then applied to determine overall unit and LMA ratings as shown at right and on subsequent pages:

### Rated Deficiency Categories

- Vegetation
- Trim / Thin Trees
- Enchroachments
- Animal Control
- Slope Stability
- Erosion / Bank Caving
- Cracking
- Crown Surface/Depressions/Rutting
- Rip Rap Revetments
- Seepage / Sandboils
- Underseepage Relief Wells
- Repair Gates

## Step 2: Overall Levee Rating



## OVERALL MAINTENANCE RATING FLOW CHART

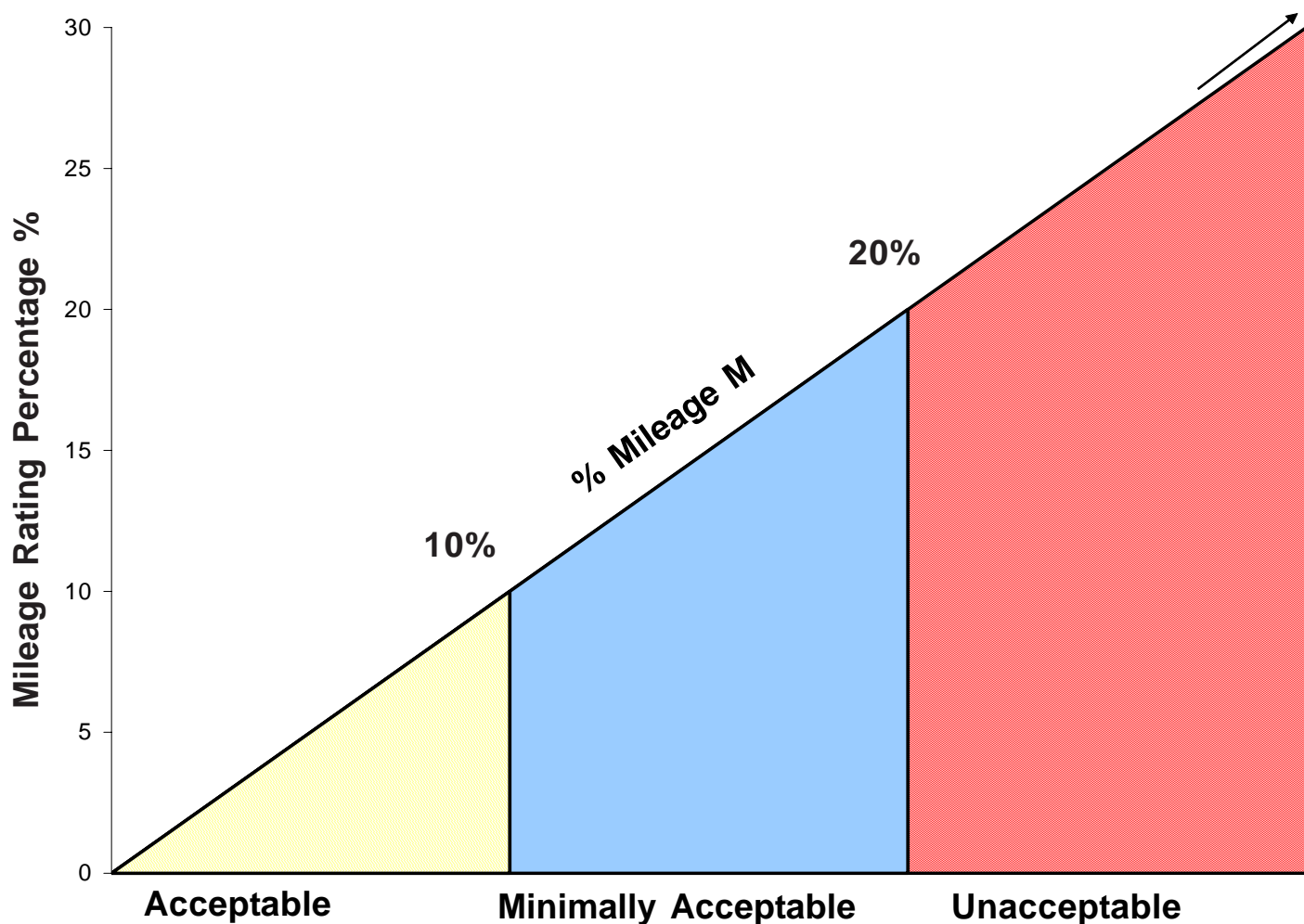
### Unit or LMA has only (M) Minimally Acceptable ratings:

The total length of all Minimally Acceptable entries in a unit is calculated and divided by the length of the unit to obtain a percentage of total unit miles rated as **M**, which we refer to as a *mileage rating percentage*. These total percentages are then compared to thresholds established by DWR to determine the unit's overall rating. This process is repeated for all LMA ratings. The calculations are as follows:

From 0.01% to 9.99% M rating results in rating of A.

From 10.00% to 19.99% rating of M results in rating of M.

≥ 20.00% rating of M results in rating of U.



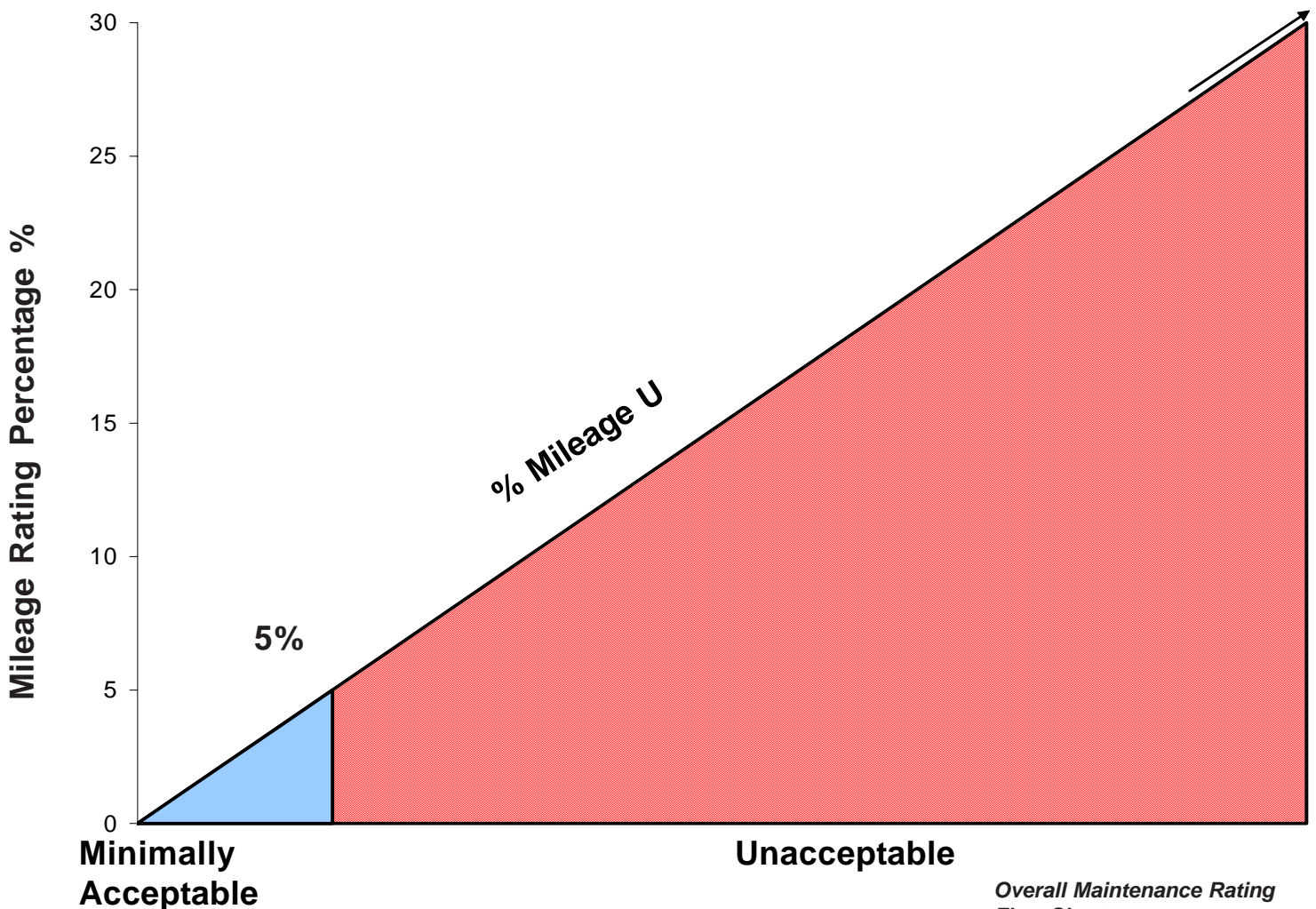
## OVERALL MAINTENANCE RATING FLOW CHART

### Unit or LMA has only (U) Unacceptable ratings:

The total length of all Unacceptable entries in a unit is calculated and divided by the length of the unit to obtain a percentage of total unit miles rated as **U**, which we refer to as a *mileage rating percentage*. These total percentages are then compared to thresholds established by DWR to determine the unit's overall rating. This process is repeated for all LMA ratings. The calculations are as follows:

From 0.01% to 4.99% U rating results in rating of M.

$\geq 5.00\%$  rating of U results in rating of U.



## OVERALL MAINTENANCE RATING FLOW CHART

### Unit or LMA has both (M + U) Minimally Acceptable & Unacceptable ratings:

The total length of all Minimally Acceptable and Unacceptable entries in a group is calculated and divided by the length of the unit to obtain a percentage of total unit miles rated as **M + 4U**, which we refer to as a *mileage rating percentage*. These total percentages are then compared to thresholds established by DWR to determine the unit's overall rating. This process is repeated for all LMA ratings. The calculations are as follows:

0.01% to 19.99% total of (M + 4U) results in rating of M.

≥ 20.00% rating of (M + 4U) results in rating of U.

